A RECLASSIFICATION OF THE SUBFAMILIES AND GENERA OF NORTH AMERICAN SYRPHIDAE (DIPTERA).

APPENDIX.

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The following key is similar to the one for the subfamilies of Syrphidae published in the Bulletin of the Brooklyn Entomological Society, xvi: 67. It differs mainly in having the aberrant genera keyed out separately, in order to remove certain complications in the preceding key, and not as a substitute, but as a supplement to it. Also a few additional characters have been included and corrections made in terminology. The writer made the mistake in the first key (see above citation) of calling the first posterior cell the discal cell. Wherever the expression "Third vein with a free branch projecting in the discal cell" or "Third vein looped downwards in the discal cell" is made the first posterior cell is meant and not the discal cell.

The keys to the genera given in the previous parts of this paper may stand as they were.

Table of the Subfamilies of Syrphidae with the Aberrant Genera Keyed Separately.

1. Antennae with a terminal style.....2.
   Antennae with dorsal arista.....4.
2. First two antennal joints elongate; anterior crossvein placed at or beyond middle of discal cell; plumula absent. *Cerioides.*
   First two joints short; anterior crossvein placed well before middle of discal cell (*Chilosinae*).....3.
3. Third antennal joint cylindrical; eyes pilose.....*Callicera.*
   Third antennal joint broadened basally; eyes bare. *Pelecocera.*
4. Antennae elongate; stigmatical crossvein present; third vein with a free branch projecting into first posterior cell (except in *Mixogaster*).....*Microdontinae.*
   A stigmal crossvein not present in the few forms which have elongate antennae; no free branch projecting into first posterior cell.....5.
5. Body thickly punctate, nearly bare; arista as short as width of third antennal joint; anal furrow very short; abdomen of both sexes with four visible segments...*Nausigaster.*
   Body not punctate, etc.....6.

6. The humeral calli and intrahumeral region distinctly destitute of pile; abdomen of both sexes with five visible segments ..... *Syrphinae.*
   Pile extending upon humeral region; abdomen of males with four visible segments exclusive of hypopygium...7.
7. Marginal cell closed and petiolate.....8.
   Marginal cell open.....10.
8. Third longitudinal vein straight; apical crossvein recurrent on distal end..... *Volucellinae.*
   Third vein looped downwards into first posterior cell....9.
9. Large, yellow and black species; post stigma opening twice as long as wide; anal vein beyond anal cell strongly bent ..... *Milesia.*
   Post stigma one and one half times, or less, as long as wide; last section of anal vein normal..... *Eristalinae,* in part.
10. Part of arista, at least, with long plumosity.....11.
    Arista pubescent or bare.....12.
11. Anterior crossvein joining discal cell before middle. *Chilosinae,* in part.
    Anterior crossvein joining discal cell at or beyond middle. *Sericomyinae.*
12. Third longitudinal vein with a deep downward loop into first posterior cell; face, except for median stripe, clothed with long pile; a distinct spinose patch present on base of hind femora on exterior side..... *Eristalinae.*
    Third vein usually straight; in forms where it is looped downwards the face is bare and the hind femora are without spinose patch.....13.
13. Discal crossvein placed before middle of discal cell. *Chilosinae.*
    Discal crossvein joining discal cell at or beyond middle..14.
14. Thorax with bristles (*Chilosinae*)..... *Ferdinandea.*
    Thorax without bristles..... *Xylotinae.*

Additional Notes.

The subfamily *Sericomyinae* is defined primarily on the structure of the genitalia. This group has unequally developed posterior claspers, or, as Metcalf calls them, styles. Metcalf (Ann. Ent. Soc. Amer., 1921, p. 207) has also noted this very unusual development of the genitalia in *Sericomyia* and *Condidea.* Apparently he did not have *Arctophila* and *Pyritis,* for these genera are not included in his publication.

Temnostoma.—This genus, as well as *Spilomyia* (see discussion under Xylotinae), has the face pilose.

Chilosinae.—A revised key is given in the August (1922) number of the Insecutor Insci. Mens. for the Chilosinae with tuberculate face.

Myioleptini.—This tribe may be characterized by the presence of pile on the humeral region; absence of stigmatical crossvein; position of anterior crossvein before middle of discal cell; dorsal arista; all the femora swollen and spinose on lower side; second longitudinal vein usually turned abruptly upwards to meet costa; third and fourth veins usually meet close to wing margin.

TABLE OF GENERA OF *Myioleptini.*

1. Body thinly clothed with short pile; face black; antennae not elongate.....*Myiolepta* Newm.
   Body and head pile for the most part developed scale-like, tomentose.....2.
2. Antennae elongate, third joint about six times as long as wide; petiole beyond union of third and fourth veins nearly as long as anterior crossvein...*Lepidostola* Will.
   Antennae normal, third joint not more than twice as long as wide; petiole much shorter than length of crossvein. *Eumyiolepta* Snn.

Lepidostola pulchra Will.—There is a specimen of this species, evidently of the type material, in the Cornell collection. Critical examination of it shows that the genus *Lepidostola* belongs to the *Myioleptini* tribe. Other peculiar characters worth noting in this species are the presence of normal pile on the occiput, arrangement of the mesonotal tomentum in three transverse rows, and the absence of the spurious vein.

Loew has described a species of this genus, *calopus,* from Cuba, and Hine's species, *transversa,* which he describes in the Ohio Naturalist, Vol. XIV, 208, under *Myiolepta,* appears to belong here, too. This species was taken in Honduras.

Eumyiolepta.—TABLE OF SPECIES.

1. Face with a pair of luteous spots.....*strigilata* Lw.
   Face black in ground color, usually heavily silvery pollinose .....2.
2. Tomentum of mesonotum short and arranged in rows. *auricaudata* Will.
   Tomentum generally distributed over mesonotum.....3.

3. Tomentum on mesonotum long, entirely hiding the ground color; abdomen black with transverse pollinose markings. *aurinota* Hine.

Tomentum short and sparse, easily revealing the ground color; dorsal surface of second and third abdominal segments flat and brownish in male, black in female; no transverse pollinose markings.....**cornellia** n. sp.

Eumyiolepta cornellia n. sp.

Male.—Ocellar region shining black, remainder of ocellar triangle silvery pollinose; frontal triangle silvery pollinose and bearing whitish tomentum except on the shining black patch above antennae; face densely silvery pollinose except on shining black, small rounded tubercle and cheek; occiput silvery, with white tomentum. Mesonotum with sparse, short, pale yellow tomentum; tomentum lighter on pleurae. Legs black, except tips of femora, bases of tibiae, and tips of fore and middle tibiae, which are yellowish; fore tarsi brownish; first and second joints of middle and hind femora yellowish, remaining joints brownish; femora and tibiae clothed with white tomentum. Abdomen with first three tergites colored from grayish to brown, flattened and clothed with very sparse and short black hairs, their sides with longer whitish hairs and tomentum; fourth tergite rounded, black, with yellowish posterior margin, thinly clothed with yellowish tomentum. Wings hyaline, with dusky cloud between tips of first and third vein; halteres yellowish brown; squamae and plumula whitish. Length, 9.5 mm.; wing, 7 mm.

Female.—Front twice as wide at antennae as at ocelli, silvery pollinose, sparsely clothed with white tomentum; antennal frons (a definite bare space in Xylotinae and certain Chilosinae extending across frons above antennae) bare, shining black. Face concave. Abdominal tergites blackish with yellowish margins. Otherwise like the male. Length, 8 mm.; wing, 6.5 mm.

Type, allotype and male paratype: Texas Pass, Ariz., July 20, 1917, J. C. Bradley and R. C. Shannon. Paratype male: Needles, California, April 6, 1918, on willow, J. C. Bradley.

Named *cornellia* in commemoration of the Cornell Biological Expedition of 1917, during which specimens were taken.

The writer has made *Myiolepta bella* Will. the type of a new genus, *Apicomyia* (August number of *Insec. Insci. Mens.*, 1922). Curran states that this species shows relationship with the Crior-

rhini. At present but two North American species of *Myiolepta* which Williston recognized remain in the genus, *M. nigra* Lw. (entirely black species) and *M. varipes* Lw. (anterior corners of abdomen yellowish). There is a third form, represented by a single female specimen in the Cornell Collection, which appears distinct.

Myiolepta californica n. sp.

Female.—Head over one and one half as broad as high; frons at vertex two thirds the width of frons at antennae; face nearly truncate, but very little produced downwards. Pile everywhere very short and sparse. Anterior corners of second tergite luteous; base of wings, squamae, halteres, and plumula very light yellow; basal section, *i.e.,* before the angle, of apical crossvein greater than length of anterior crossvein; wings hyaline. Length, 9 mm.; wing, 7.5 mm.

Holotype female: Sherwood, Mendocino Co., California, July 1, 1907, J. C. Bradley. This species is closely allied to *M. nigra,* which differs in having the head as high as broad; frons at antennae nearly twice as broad as at vertex; face protruding downwards; base of wings less conspicuously light; wings smoky throughout; legs more contrastingly bicolored (*californica* has black femora, brown tibiae, fore tarsi brownish; first and second joints of middle and hind tarsi dull yellow, remaining joints brownish); the section of apical crossvein before the angle of about half of the length of anterior crossvein; general color throughout shining black.

Curran (Canadian Entomologist, 1922, p. 18) recognizes *M. lunulata* Bigot as being distinct.

Collecting Notes on Lepidoptera. — Two specimens of *Basilarchia astyanax* form *albofasciata* Newcomb were taken by the writer during the summer of 1922, a male at Ogdensburg, New Jersey, on July 10, and a female at Flushing, Long Island, New York, on August 5. A fresh male specimen of *Epimecis virginaria* form *carbonaria* Haimbach was taken at Flushing, New York, on October 28, 1922. This seems to be a late occurrence for this insect, as both the typical and this melanic form are usually found during May, though occasionally an individual is found during the summer months; *carbonaria* is a rather scarce form at any time, females being of much rarer occurrence than males.—E. L. Bell, Flushing, N. Y.